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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,620	06/18/2002	Wilfried Reschnar	2075	5508

7590

02/01/2005

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EXAMINER

WONG, EDNA

ART UNIT

PAPER NUMBER

1753

DATE MAILED: 02/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/088,620	RESCHNAR ET AL.	
	Examiner	Art Unit	
	Edna Wong	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>March 19, 2002</u> . | 6) <input type="checkbox"/> Other: ____. |

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because the abstract is more than one paragraph long and more than 150 words. Correction is required. See MPEP § 608.01(b).

Claim Objections

Claims **1, 21 and 22** are objected to because of the following informalities:

Claim 1

line 10, the word "activation" should be amended to the word -- activating --.

line 11, the word "germination" should be amended to the word -- germinating --.

line 15, the words "currentless deposition of" should be amended to the words --

currentlessly depositing --.

line 18, the words "electrolytic deposition of" should be amended to the words -- electrolytically depositing --.

Claim 21

line 2, the numbers "(13, 14)" should be amended to the numbers -- (15, 16) --.

Claim 22

line 2, the numbers "(13, 14)" should be amended to the numbers -- (15, 16) --.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claims **1-24** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1

lines 2-3, "the internal electrodes" lack antecedent basis.

lines 4-5 and 6-7, the method steps are introduced by the words “characterized by” and “by the following method steps”. It is unclear what are the steps further limiting the method.

line 5, “the treatment” lacks antecedent basis.

line 5, “the outer faces” lack antecedent basis.

lines 21-22, “the flexible external electrodes” lack antecedent basis.

line 22, it appears that the “solder” is the same as the electrolytic deposited tin or tin alloy recited in claim 1, lines 18-19. However, it is unclear if it is.

line 23, it appears that the “solder” is the same as that recited in claim 1, line 22. However, it is unclear if it is.

Claim 2

line 2, it is unclear if a pH value of 68 is meant to be claimed.

Claim 4

lines 2-3, the phrase “in particular at a frequency of over 40 kHz and at a

temperature of 20 to 30°C" is indefinite.

Claim 7

lines 3-4, the phrase "in particular at a temperature of 20 to 30°C" is indefinite.

Claim 8

line 3, "(such as NiSO₄)" is indefinite. It is unclear if the narrower limitation is, in fact, a claim limitation.

line 3, "(such as NaH₂PO₂)" is indefinite. It is unclear if the narrower limitation is, in fact, a claim limitation.

Claim 10

line 3, "(such as NiSO₄)" is indefinite. It is unclear if the narrower limitation is, in fact, a claim limitation.

line 4, "(such as NaH₂PO₂)" is indefinite. It is unclear if the narrower limitation is, in fact, a claim limitation.

lines 5-6, "the complexing agent" lacks antecedent basis.

Claim 14

line 2, "tin alloys" (plural) lack antecedent basis.

line 3, the phrase "in particular polyaminopolycarboxylic acid" is indefinite.

Claim 17

line 2, "the oil-free nitrogen gas stream" lacks antecedent basis.

Claim 19

line 3, "(no-clean flux)" is indefinite. It is unclear if the narrower limitation is, in fact, a claim limitation.

line 4, "the suitable outer faces" lack antecedent basis.

line 5, the phrase "in particular a 2% adipic acid in ethanol" is indefinite. It is unclear if the narrower limitation is, in fact, a claim limitation.

Claim 20

line 3, "the surface mounting metallizing" lacks antecedent basis.

Claim 21

lines 3-4, the phrase "in particular at a feeding speed of 300 to 600 mm/min." is indefinite. It is unclear if the narrower limitation is, in fact, a claim limitation.

Claim 23

line 2, "the desired faces" lack antecedent basis.

lines 2-3, it is unclear what is meant by "ram application". Is this known in the art?

Claim 24

lines 3-4, the phrase "in particular at room temperature" is indefinite. It is unclear if the narrower limitation is, in fact, a claim limitation.

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter:

Claims **1-24** define over the prior art of record because the prior art does not teach or suggest a method for mounting flat external electrodes on a piezoceramic multi-layer actuator characterized by the treatment of at least the outer faces that are to be provided with the external electrodes, by the following method steps: (a) fine cleaning; (b) pickling; (c) activation; (d) germination; (e) currentless deposition of nickel

and/or copper; (f) electrolytic deposition of tin or a tin alloy; (g) drying and/or tempering; (h) exerting superficial pressure on the flexible external electrodes to which solder has already been applied; and (i) applying solder to the external electrodes in protective gas.

The prior art does not contain any language that teaches or suggests the above. *DE 3402494* does not teach the steps of (b) pickling in a dilute acid solution; (g) drying and/or tempering; (h) exerting superficial pressure on the flexible external electrodes to which solder has already been applied; and (i) applying solder to the external electrodes (15, 16) in protective gas. Therefore, a person skilled in the art would not have been motivated to adopt the above conditions, and a prima facie case of obviousness cannot be established.

Claims 1-24 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Conclusion

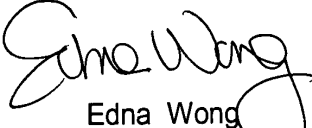
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Issartel (US Patent No. 5,245,734) is cited to teach making multilayer piezoactuators by stacking and pressing alternating layers of piezoceramic material and interdigital electrode material.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 3:30 pm, Flex Schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Edna Wong
Primary Examiner
Art Unit 1753

EW
January 28, 2005